



## Scientific citations in Wikipedia

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# Scientific citations in *Wikipedia*

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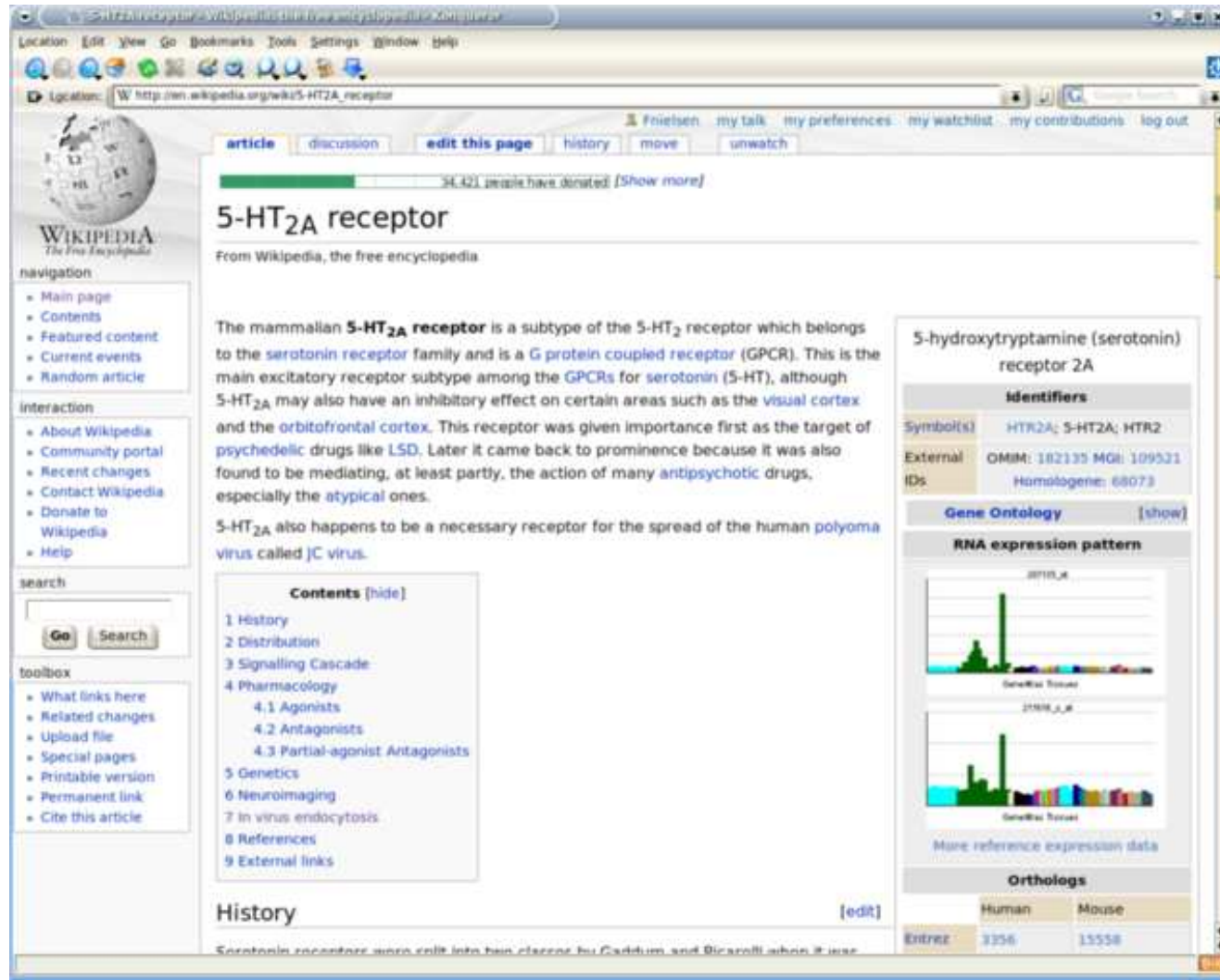
and

Neurobiology Research Unit

Copenhagen University Hospital Rigshospitalet

November 30, 2007

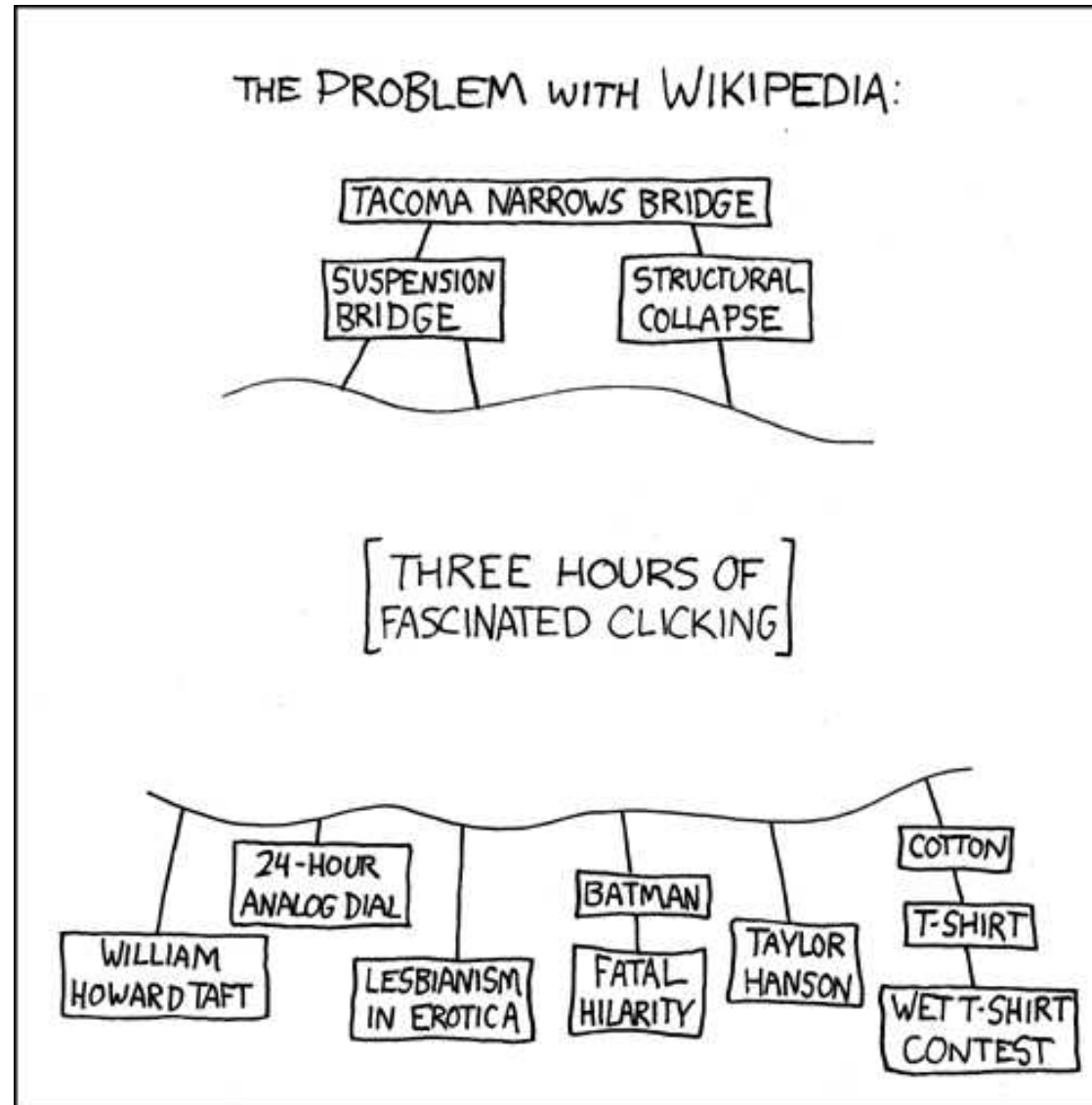
# Wikipedia



The screenshot shows the Wikipedia article for the 5-HT<sub>2A</sub> receptor. The article is written in English and is part of the English Wikipedia. The page layout includes a navigation sidebar on the left, a main content area, and a sidebar on the right. The main content area contains the article text, which describes the 5-HT<sub>2A</sub> receptor as a subtype of the 5-HT<sub>2</sub> receptor family and a G protein coupled receptor (GPCR). The article mentions that this receptor is the main excitatory receptor subtype among the GPCRs for serotonin (5-HT), although 5-HT<sub>2A</sub> may also have an inhibitory effect on certain areas such as the visual cortex and the orbitofrontal cortex. The article also mentions that this receptor was given importance first as the target of psychedelic drugs like LSD, and later it came back to prominence because it was also found to be mediating, at least partly, the action of many antipsychotic drugs, especially the atypical ones. The article further states that 5-HT<sub>2A</sub> also happens to be a necessary receptor for the spread of the human polyoma virus called JC virus.

The right sidebar contains a table of identifiers for the 5-hydroxytryptamine (serotonin) receptor 2A, including symbols (HTR2A, 5-HT2A, HTR2), external IDs (OMIM: 182135, MGI: 109521, Homologene: 68073), and a Gene Ontology table. Below the table is a section for RNA expression pattern, showing two bar charts for the expression of HTR2A in different tissues. The bottom section of the right sidebar is titled 'Orthologs' and shows a table with columns for Human and Mouse, and rows for Entrez IDs (3356 and 15558).

One can read Wikipedia . . .



Randall Munroe, "The Problem with Wikipedia", *XKCD*. (cc by-nc/2.5/).

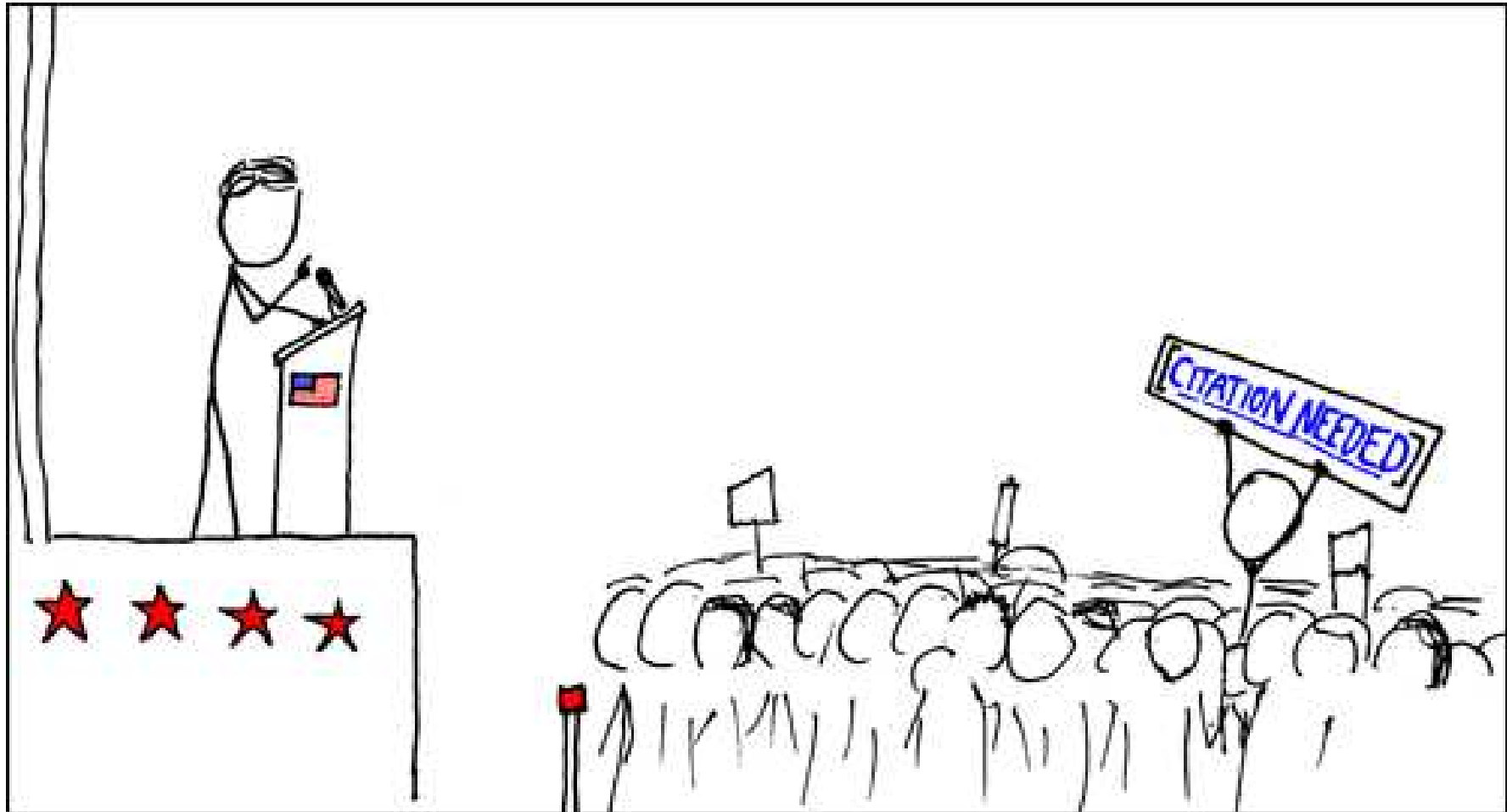
One can write Wikipedia . . .

A cartoon by Danish cartoonist couple “Wulffmorgenthaler” wrongfully claims that the Wikipedia is written by an extremely dedicated squirrel. This is not the case, and the cartoon is not reproduced here due to the faulty content.

Wulffmorgenthaler, November 2007.

One can support statements with references to trusted material . . .





Randall Munroe, "Wikipedia Protester", *XKCD*. (cc by-nc/2.5/).

# Citations as structured content

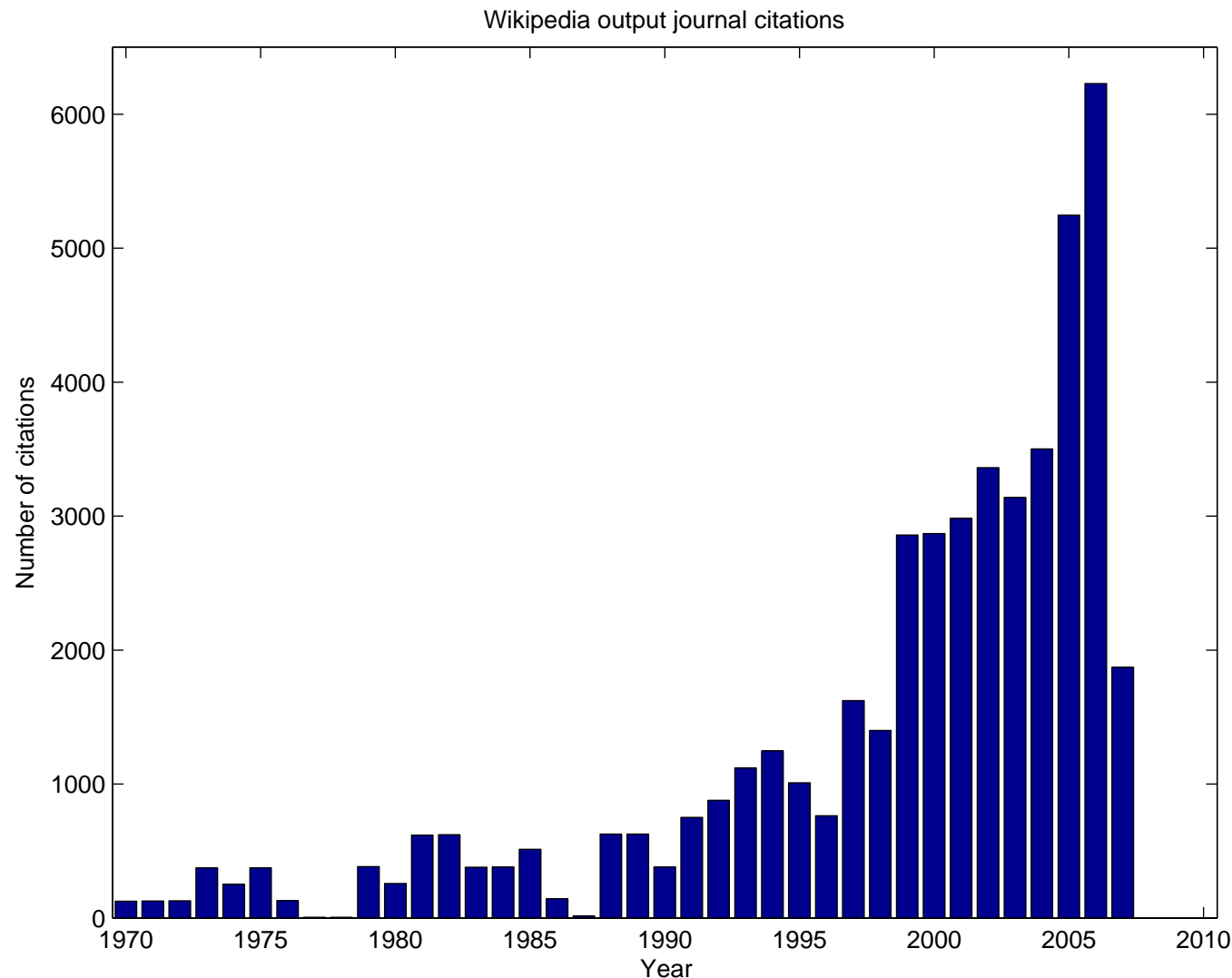
The Internet-based collaborative “database” /encyclopedia Wikipedia may contain structured information, e.g., scientific citations:

```
{{cite journal|author=Filipek PA, Accardo PJ, Baranek GT ''et al.''
|title=The screening and diagnosis of autistic spectrum disorders
|journal=J Autism Dev Disord |date=1999 |volume=29 |issue=6
|pages=439--84
|doi=10.1023/A:1021943802493|pmid=10638459}}
```

Or Proteins:

```
{{protein
|Name=5-hydroxytryptamine (serotonin) receptor 2A
|caption= |image= |width= |HGNCid=5293 |Symbol=HTR2A
|AltSymbols=HTR2 |EntrezGene=3356 |OMIM=182135 |RefSeq=NM_000621
|UniProt=P28223 |PDB= |ECnumber= |Chromosome=13 |Arm=q |Band=14
|LocusSupplementaryData=-q21}}
```

# Year of publication of cited journal article



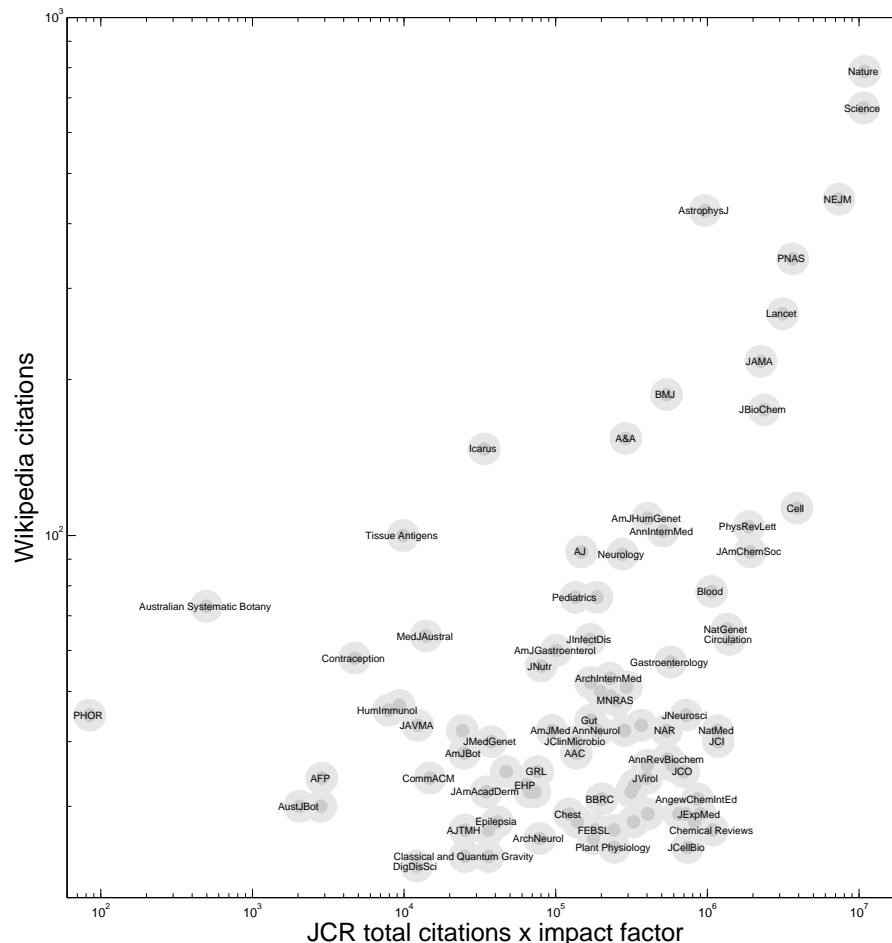
# Analysis of scientific citations

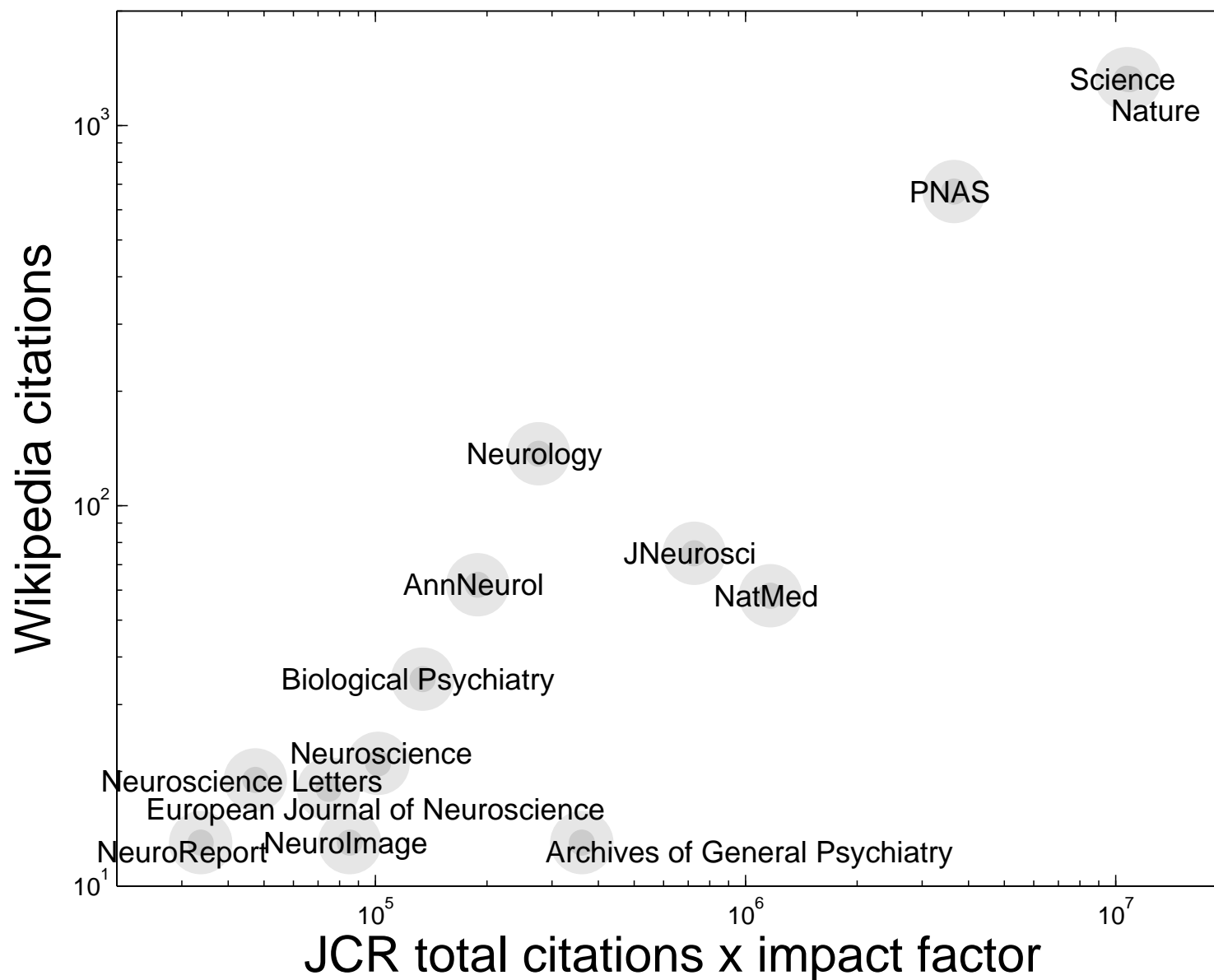
Scientific citations from Wikipedia to journals

Comparison against *Journal Citation Reports* from Thomson Scientific

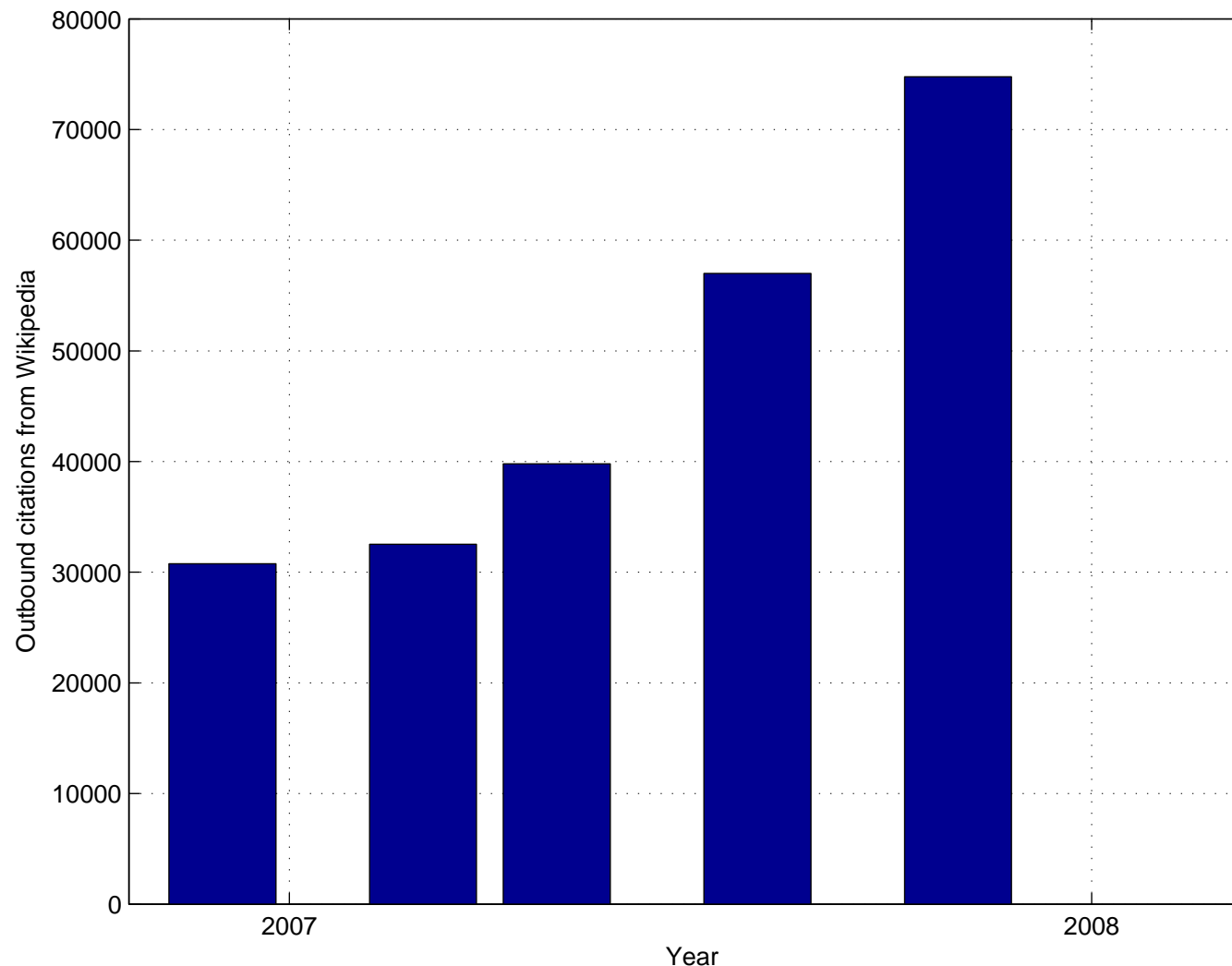
The *Nature* and *Science* journals are the most cited from Wikipedia.

The product between total citations and impact factor showed good correlation with the Wikipedia citation count (Nielsen, 2007).





# Growth in citations from Wikipedia . . .



... So Wikipedia may not only be source for “human reading” information but also a source for data that may be subjected to computer-based analysis ...

## References

Nielsen, F. Å. (2007). Scientific citations in wikipedia. *First Monday*, 12(8).